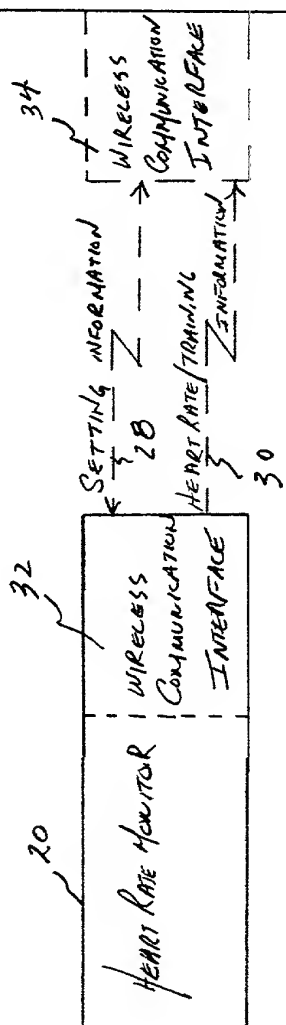
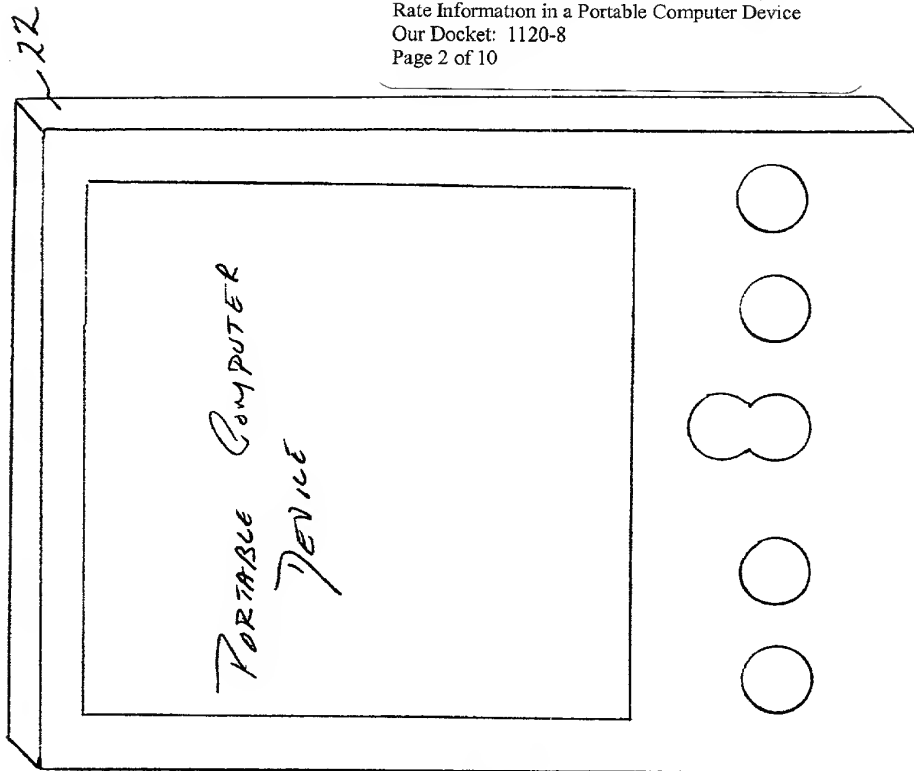


FIGURE 1 (PRIOR ART)



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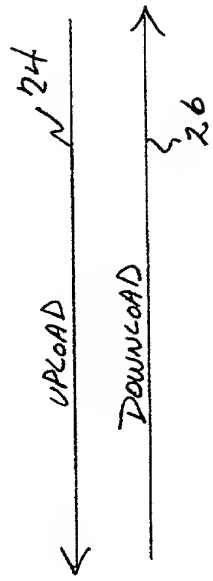
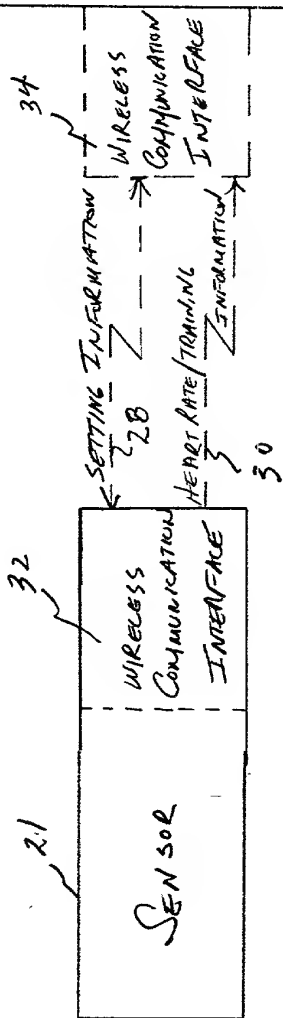
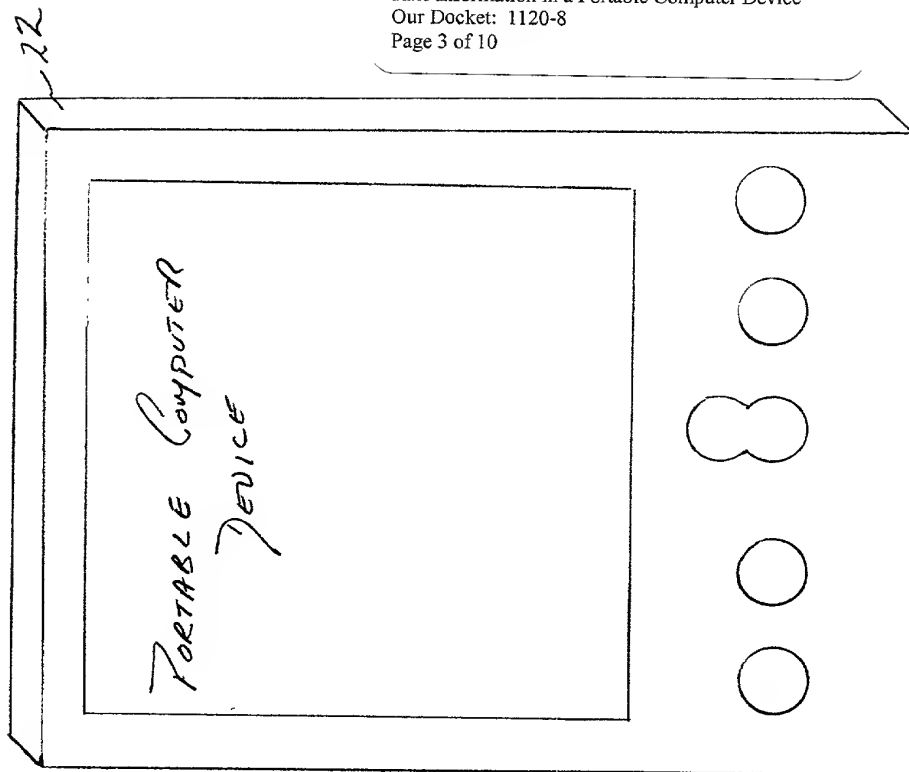


FIGURE 2A



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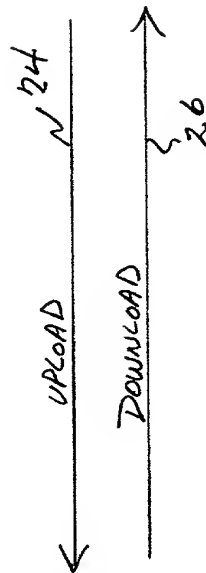


FIGURE 2B

FIGURE 3

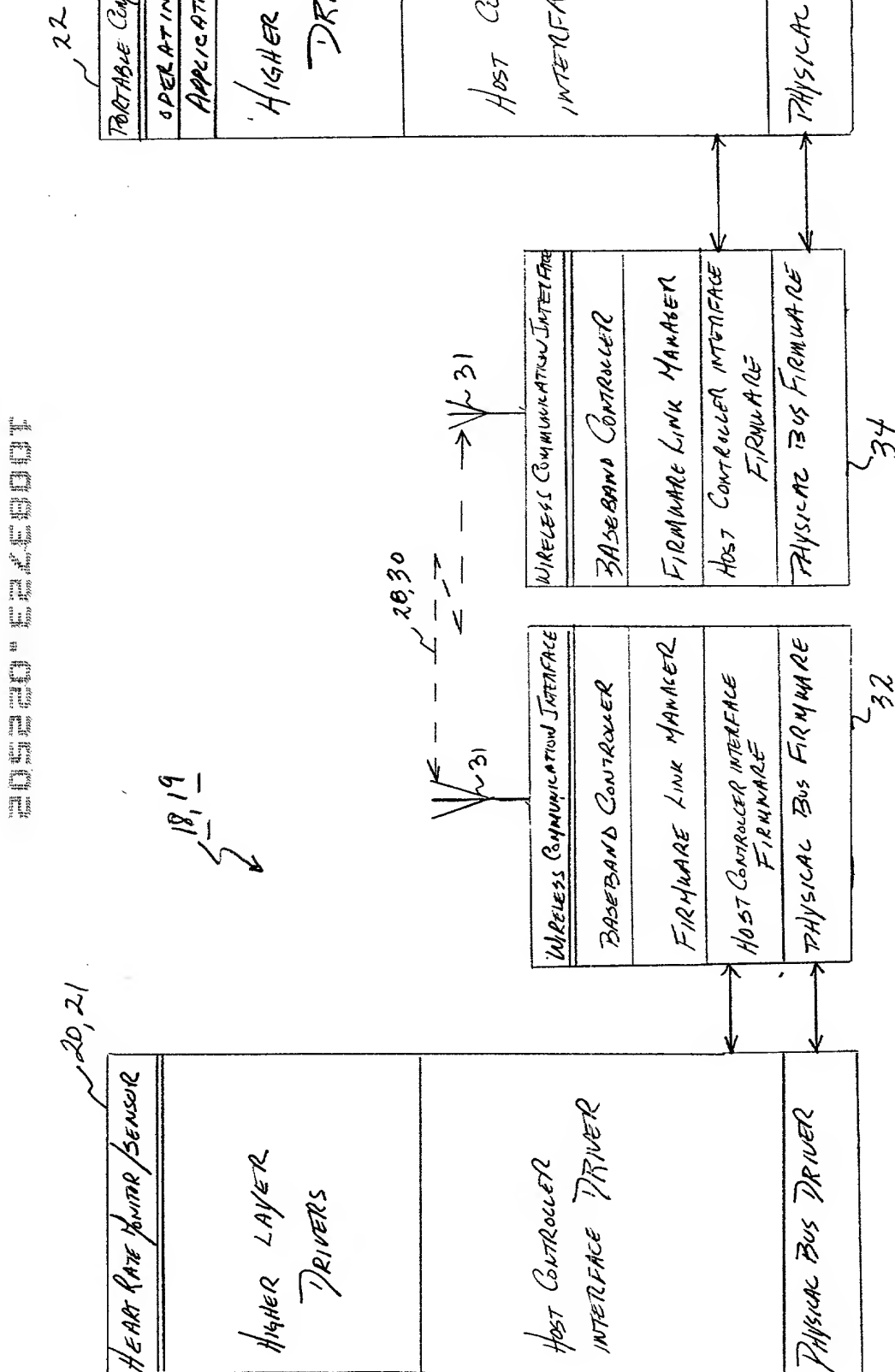


FIGURE 4

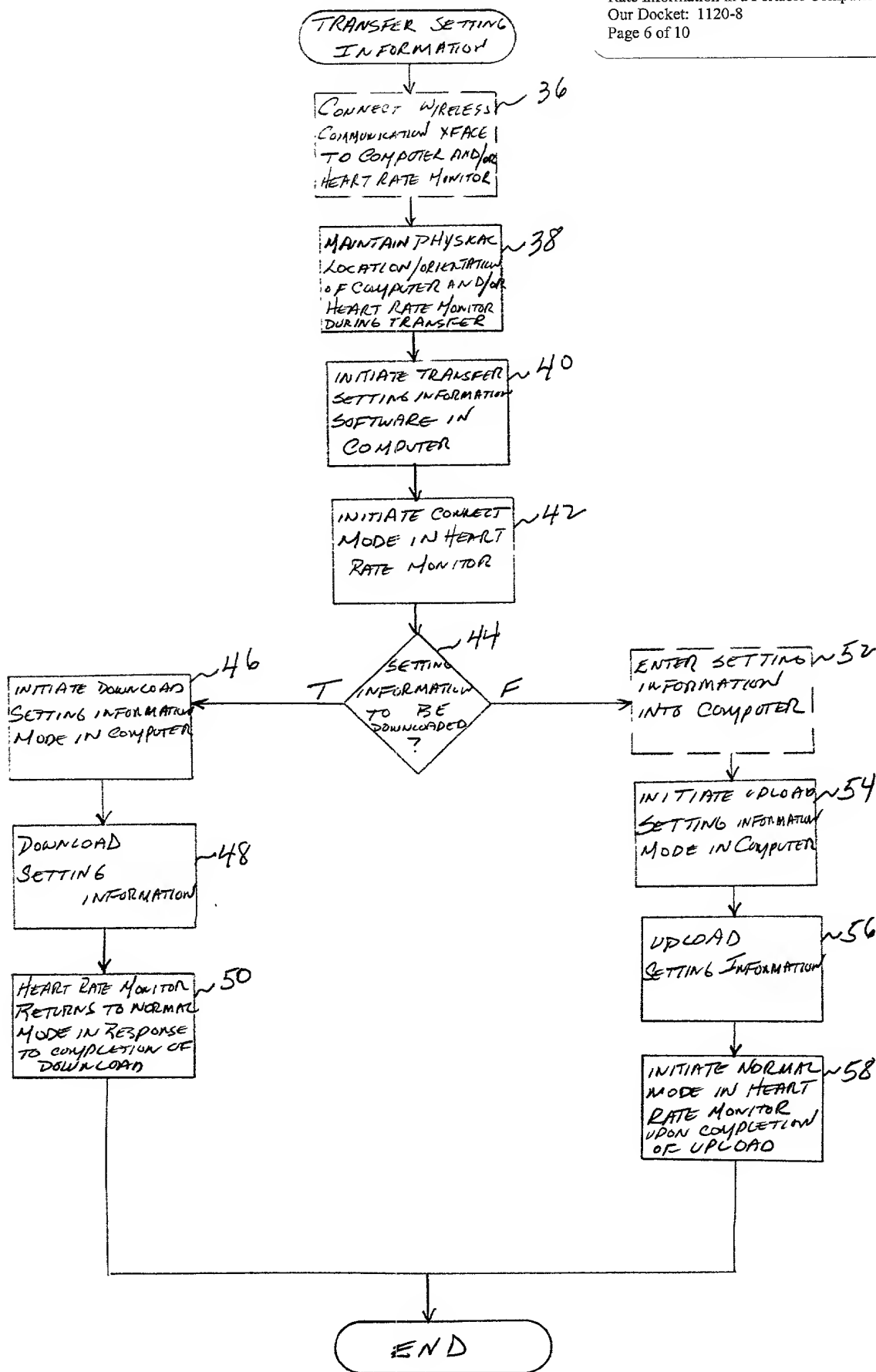


FIGURE 5

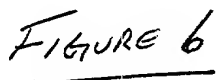


FIGURE 6

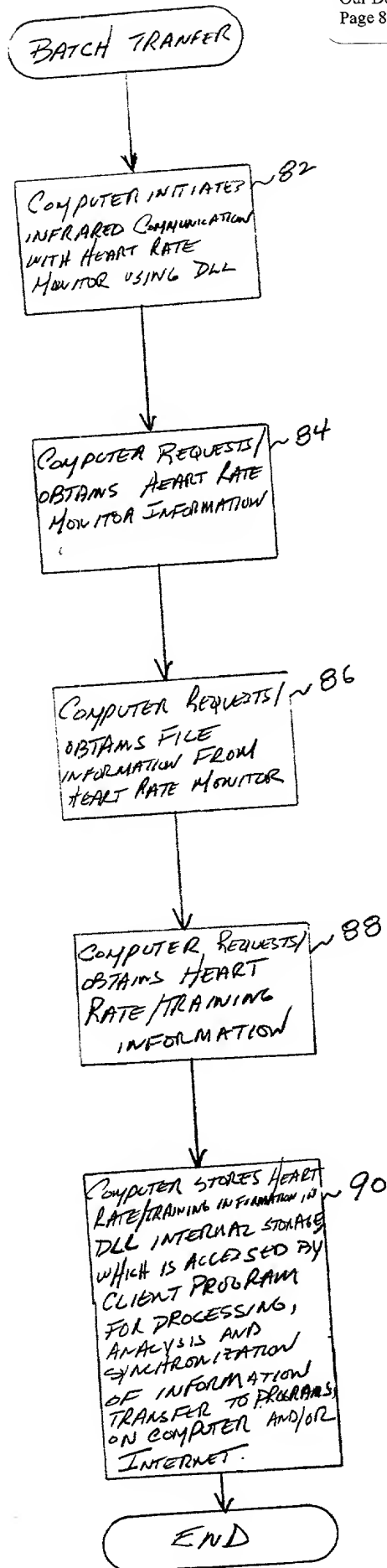


FIGURE 7

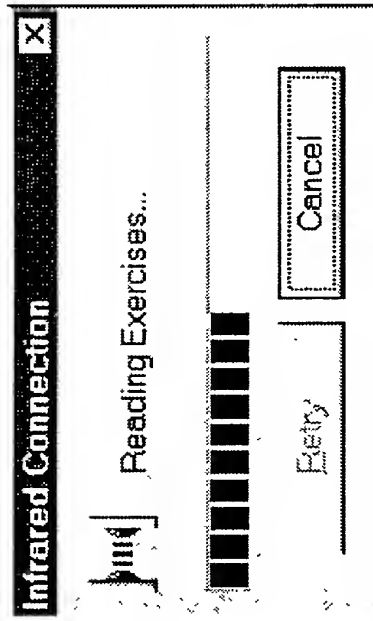


FIGURE 8

Approved for Release by NSA on 09-08-2013 pursuant to E.O. 13526

PORTABLE COMPUTER DEVICE

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INFRARED COMMUNICATION DYNAMIC LINK LIBRARY (DLL):

- CLIENT PROGRAM USES DLL AS
IN-PROCESS SERVER TO COMMUNICATE
THROUGH INFRARED PORT WITH
HEART RATE MONITOR

- DLL PERFORMS TWO FUNCTIONS

1. COMMUNICATION WITH HEART
RATE MONITOR
2. COMMUNICATION WITH CLIENT
PROGRAM

- COMMUNICATION LINK STEPS:

1. INITIATE INFRARED COMMUNICATION
2. OBTAIN HEART RATE MONITOR
INFORMATION
3. OBTAIN FILE INFORMATION
4. OBTAIN HEART RATE INFORMATION

- DLL INTERNAL STORAGE CONTAINS
DOWNLOADED INFORMATION FOR
PROCESSING BY CLIENT PROGRAM

IN PROCESS

CLIENT PROGRAM:

- CALL DLL FUNCTIONS TO TRANSFER
INFORMATION FROM HEART RATE
MONITOR TO DLL INTERNAL
STORAGE

- CALL DLL FUNCTIONS TO READ
UPLOADED INFORMATION FROM
DLL INTERNAL STORAGE

- DISPLAY AND ANALYZE INFORMATION
IN VARIOUS WAYS

1. GRAPHICAL ANALYSIS
2. STATISTICAL ANALYSIS
3. TIME IN TARGET ZONE
4. TIME ABOVE TARGET ZONE
5. TIME BELOW TARGET ZONE
6. AVERAGE HEART RATE
7. $\dot{V}O_2$ ESTIMATE

- OPTIONALLY SYNCHRONIZE WITH
COMPUTER FOR INFORMATION
TRANSFER TO ADDITIONAL PROGRAMS
ON COMPUTER AND/OR INTERNET

FIGURE 9